

FIRST RECORDS OF PARASITOIDS FOR SLIME MOLD BEETLES OF THE FAMILY SPHINDIDAE (COLEOPTERA: CUCUJOIDEA)¹

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ABSTRACT: The first three records of parasitoids for the family Sphindidae (Coleoptera: Cucujoidea) are provided: (1) *Sphindus americanus* parasitized by *Pentelicus* sp. (*varicornis* or near) (Hymenoptera: Encyrtidae) in New York, (2) *Carinisphindus* sp. by another *Pentelicus* sp. (probably sp. nov.) in Puerto Rico, and (3) *Eurysphindus comatulus* by *Blacus koenigi* (Hymenoptera: Braconidae) in New York. These observations also represent the first host information for the genus *Pentelicus* and a new host record for *Blacus koenigi*.

Sphindidae is a small family (9 genera and 51 species) of myxomycophagous (slime mold eating) beetles that is represented in every major biogeographical region in the world. Little has been published on the biology of sphindids other than life history notes of one species (Burakowski & Ślipiński, 1987), host food records (see McHugh, 1993 for citations) and a discussion of the possibility of assistance in slime mold spore dispersal (see Blackwell, 1984; McHugh, 1993). During the summer of 1990, simple attempts to rear species of sphindids resulted in the identification of the first parasitoids known for the family.

In June, a few specimens of an undescribed species of *Carinisphindus* were collected from the sporocarp of a myxomycete (*Stemonitis* sp.) in the Caribbean National Forest at El Verde Field Station, elev. 300 M., in Puerto Rico. After the beetles were extracted and the slime mold was examined closely, three *Carinisphindus* pupae were found. Within two weeks, a single parasitoid wasp emerged from each pupa. One specimen was caught and identified as an apparently undescribed species of the encyrtid genus *Pentelicus* Howard (= *Hemaenasius* Ashmead) (J. S. Noyes, pers. comm.).

In late July, a laboratory culture of *Sphindus americanus* LeConte also was found to be parasitized by encyrtid wasps. The beetle culture was started about one month earlier with field-collected sporocarps of *Fuligo septica* (L.) Wiggers from Ithaca, New York. The parasitoid was determined as another species of *Pentelicus*, closely resembling *Pentelicus varicornis* (Girault), but possessing an unusually long first funicle segment. This antennal feature may support recognition as a new species (J. S. Noyes, pers. comm.). Collecting in two subsequent years suggests

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that this *Pentelicus* is most abundant in New York during the latter part of the summer (late July-August), although sporocarps of the slime mold are found colonized by *S. americanus* as early as May.

A culture of *Eurysphindus comatulus* McHugh was established in August from fruiting bodies of *Mucilago crustacea* Wiggers collected in Brooktondale, Tompkins Co., New York. This culture was thought to be free of arthropods other than mites and various life stages of *E. comatulus*, but after two weeks it produced many specimens of the braconid *Blacus koenigi* Fischer. The remains of many parasitized last-instar larvae were found in a characteristic pose. Each larval skin was draped over the top of a white, silky cocoon with the legs wrapped around the cocoon as though holding it.

DISCUSSION

The *Pentelicus* species parasitizing *Carinisphindus* sp. in Puerto Rico represents the first known parasitoid for a sphindid as well as the first host record for a species of this encyrtid genus. The occurrence of a second *Pentelicus* species parasitizing a species of *Sphindus*, a genus closely related to *Carinisphindus* (see McHugh, 1993), suggests that the association in Puerto Rico was not incidental.

The discovery that *Blacus koenigi* is a parasitoid of *Eurysphindus comatulus* sheds light on the biology of this poorly understood braconid genus. Čapek (1969) states that the tribe Blacini is made up mostly of parasitoids of the larvae of curculionid beetles and related groups, but adds that the taxonomic position of the genus *Blacus* "may be doubted as very little is known about its biology, host relations, etc." later, Čapek (1970) suggests that the biology of *Blacus* involves parasitism of wood boring Coleoptera larvae. Some species of *Blacus* are known to parasitize mycophagous ("true fungus" feeding) beetles (Achterberg, 1975). In a list of label data, Achterberg (1975) also reports that *B. koenigi* was collected from a sporocarp of *Stemonitis fusca* Roth, a myxomycete known to be a host of *E. comatulus* (as well as several other sphindid species). Achterberg adds that this species is "mainly collected in August and first half of October". The parasitized culture of *E. comatulus* was started with slime mold sporocarps collected in August.

All specimens are deposited in the Cornell University Insect Collection with the exception of four specimens of *Pentelicus ?varicornis* which are in the reference collection of J. S. Noyes (The Natural History Museum, London) and 16 specimens of *Blacus koenigi* at the Biosystematics Research Centre (Agriculture Canada, Ottawa).

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